

WHAT IS CLAIMED IS:

1. An image forming device comprising:

an object to be biased;

a bias applying power source that applies a bias to

5 the object, the bias applying power source comprising a forward bias applying circuit and a reverse bias applying circuit connected in series to the object, the forward bias applying circuit applying a forward bias to the object according to a constant current control and comprising a 10 voltage detecting circuit that detects an output voltage from the forward bias applying circuit; and

resistance detecting means for detecting a resistance on the object based on the output voltage detected by the voltage detecting circuit and a resistance on the reverse 15 bias applying circuit when the forward bias applying circuit executes constant current control.

2. The image forming device according to claim 1, wherein the forward bias applying circuit further comprises a booster circuit connected to the object, the booster circuit including a transformer having a primary winding, secondary winding, and an auxiliary winding to which the 20 voltage detecting circuit is connected.

3. The image forming device according to claim 2, wherein the auxiliary winding is provided at a primary 25 winding side.

4. The image forming device according to claim 3,  
wherein the resistance detecting means determines the  
resistance on the object based on equation  $Z=(\alpha V_e - R i_1)/i_1$ ,  
where  $Z$  is a resistance on the object,  $\alpha$  is a ratio of  
voltages in the secondary winding and auxiliary winding,  $V_e$   
5 is a voltage detected by the voltage detecting circuit,  $R$  is  
a resistance on the reverse bias applying circuit, and  $i_1$  is  
a constant current set for constant current control.

5. The image forming device according to claim 4,  
10 wherein equation

$$Z' = \{(\alpha \pm A) \cdot (V_e \pm B) \cdot D - (R \pm E) (i_1 \pm F) \pm G\} / (i_1 \pm H)$$
  
is employed in lieu of the equation  $Z=(\alpha V_e - R i_1)/i_1$  in  
order to take factors or causes that vary the resistance  
value  $Z$  into consideration where  $A$ ,  $B$ ,  $D$ ,  $E$ ,  $F$ ,  $G$  and  $H$   
15 represent numerals determined depending on the factors or  
causes that vary the resistance value  $Z$ .

6. The image forming device according to claim 1,  
wherein the forward bias applying circuit determines and  
applies a bias value based on a resistance on the object  
20 detected by the resistance detecting means.

7. The image forming device according to claim 1,  
further comprising an image carrying member for carrying a  
developer image, the image carrying member being disposed in  
contact with the object.

25 8. The image forming device according to claim 7,

wherein the object is a transfer roller and the image carrying member is a photosensitive drum wherein the transfer roller transfers the developer image on the photosensitive drum onto a sheet of paper.

5 9. The image forming device according to claim 1, wherein the object is a roller member formed of a resilient ion-conducting material.

10. An image forming device comprising:

a photosensitive member that forms a latent image  
10 thereon;

a developing roller that develops the latent image and provides a toner image using toner;

a transfer roller that transfers the toner image onto a sheet of paper;

15 a bias applying circuit that outputs a voltage to the transfer roller, a closed circuit being configured by at least the bias applying circuit and the transfer roller, a resistance being imposed on the bias applying circuit;

20 a voltage detecting circuit that detects the voltage output from the bias applying circuit; and

a controller that detects the resistance imposed on the bias applying circuit.

25 11. The image forming device according to claim 10, further comprising a constant current controlling circuit that controls a current flowing in the closed circuit to be

a predetermined constant based on the voltage detected by the voltage detecting circuit and the resistance detected by the controller.